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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/028,274	12/28/2001	Young-Hoon Kim	123054-05005224	2744

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EXAMINER	
SOL, ANTHONY M	

ART UNIT	PAPER NUMBER
2662	

DATE MAILED: 10/17/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/028,274	KIM ET AL.	
	Examiner	Art Unit	
	Anthony Sol	2662	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *8-11 and 13-17* is/are allowed.

6)☒ Claim(s) *1-3,5,6 and 12* is/are rejected.

7)☒ Claim(s) *4 and 7* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 December 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

1. The information disclosure statement filed 2/14/02 fails to comply with the provisions of 37 CFR 1.97, 1.98 and MPEP § 609 because there is no concise explanation of relevance for non-English language information nor is their an English translation of the foreign documents. It has been placed in the application file, but the information referred to therein has not been considered as to the merits. Applicant is advised that the date of any re-submission of any item of information contained in this information disclosure statement or the submission of any missing element(s) will be the date of submission for purposes of determining compliance with the requirements based on the time of filing the statement, including all certification requirements for statements under 37 CFR 1.97(e). See MPEP § 609.05(a).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 12 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 12 recites the limitation "method of claim 1, wherein the pilot symbol patterns used in step (c)." There is insufficient antecedent basis for this limitation in the claim. Claim 1 is a system claim, not a method claim, and does not have a step (c).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 5-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,862,275 B1 ("Dabak") in view of Pub. No. US 2002/0122557 A1 ("Aihara").

Regarding claim 1,

Dabak discloses that each bit signal of a respective symbol is subsequently received at a remote mobile antenna 212 of Fig. 1 after a transmit time τ corresponding to the j^{th} path. The signals propagate to a despreader input circuit (not shown) where they are summed over each respective symbol time to produce input signals R_j^1, R_j^2, R_j^3 and R_j^4 corresponding to the four pilot symbol time slots and the j^{th} of L multiple signal paths (Col. 3, lines 43-50; claim 1 - an accumulation processor for despreading the signals descrambled by the descrambling unit; claim 1 - a depatternization unit for

performing depatternization of the signals despread by the logic processor using pilot symbol patterns corresponding to the two transmission antennas of the base station).

Dabak further discloses received signal R_j^1 is produced by pilot symbols (B_1, B_1) having a constant value (11,11) at symbol time T for all time slots. Thus, the received signal is equal to the sum of respective Rayleigh fading parameters corresponding to the first and second antennas (Col. 4, lines 14-18; claim 1 - an accumulator bank unit for performing accumulation and addition processes of the signals that have undergone depatternization by the depatternization unit to output signals corresponding to the transmission antennas).

Dabak does not explicitly disclose a cell search unit for detecting frame timing information and scrambling codes of the base station from signals output from the base station, nor a descrambling unit for descrambling the signals output from the base station using the frame timing information and the scrambling codes, which are detected by the cell search unit.

Aihara discloses a CDMA cellular system, in which a mobile station carries out a cell search in three stages: slot timing detection, scrambling code group identification and scrambling code timing (i.e. frame timing) detection, and scrambling code identification (Pg. 3, paragraph 50; claim 1 - a cell search unit for detecting frame timing information and scrambling codes of the base station from signals output from the base station; claim 1 - a descrambling unit for descrambling the signals output from the base station using the frame timing information and the scrambling codes, which are detected by the cell search unit).

It would have been prima facie obvious to one of ordinary skill in the art at the time of the invention was made to modify the cell selection system of Dabak to include a cell search unit and a descrambling unit as disclosed by Aihara to implement a synchronization acquisition method (Aihara, pg. 1, para. 50, line 1). One skilled in the art would have been motivated to combine Dabak with Aihara (collectively "Dabak-Aihara") to generate the claimed invention with a reasonable expectation of success.

6. Regarding claim 2,

Dabak-Aihara discloses a system that covers all the limitations of the parent claim.

Dabak-Aihara discloses that in the third-stage processing section 115 of Fig. 4, a scrambling code generator 116 generates the 16 scrambling codes belonging to an identified scrambling code group. Dabak-Aihara further discloses that a correlation circuit 117 calculates a correlation value between receive data and a scrambling code (Aihara, pg. 3, para. 48; claim 2 - the descrambling unit comprises: a scrambling code generator for generating scrambling codes that are synchronized with the frame timing of the base station using the frame timing information and the scrambling code detected by the cell search unit)

Dabak-Aihara further discloses that the second search code is distributed in a different pattern (a distribution pattern of a second search code number multiplied by one symbol of each slot) for each group containing a plurality of scrambling codes that are long-period codes (Aihara, pg. 1, para. 4, lines 10-14; claim 2 - a multiplying

processor for multiplying the scrambling codes generated by the scrambling code generator by the signals output by the base station).

7. Regarding claim 3,

Dabak-Aihara discloses a system that covers all the limitations of the parent claim.

Dabak-Aihara shows in Fig. 3 a phase correction circuit where input signals and their complex conjugates are multiplied by Rayleigh fading parameter estimate signals and summed as indicated to produce path-specific first and second symbol estimates. The input signals corresponding to the pilot symbols for each time slot are given in equations [5-8] of column 4 of Dabak (pilot symbol patterns) (Dabak, Col. 4, lines 53-57, lines 12-13; claim 3 - a symbol pilot generator for generating pilot symbol patterns corresponding to the two transmission antennas of the base station; claim 3 - a multiplier for multiplying each of the pilot symbol patterns generated symbol pilot generator by the signals despread by the accumulation processor).

8. Regarding claim 5,

Dabak-Aihara discloses a system that covers all the limitations of the parent claim.

Dabak-Aihara discloses that the pilot symbols are obtained from a common pilot channel (Dabak, col. 5, lines 33-34; claim 5 - the cell search unit uses, among channels

transmitted from the base station, a common pilot channel to detect the frame timing information and the scrambling codes of the base station).

9. Regarding claim 6,

Dabak-Aihara discloses a system that covers all the limitations of the parent claim.

Dabak-Aihara discloses that a channel orthogonal code Cm is multiplied by each symbol to provide a unique signal (Dabak, col. 3, lines 10-14; claim 6 - the pilot symbol patterns used by the depatternization unit are orthogonal to one another).

Allowable Subject Matter

10. Claims 4 and 7 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. Claims 8-11 and 13-17 are allowed.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Sol whose telephone number is (571) 272-5949. The examiner can normally be reached on M-F 7:30am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hassan Kizou can be reached on (571) 272-3088. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CHAU NGUYEN
SUPERVISORY PATENT EXAMINER
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AMS

10/6/2005